

REMARKS

Claims 1 and 6-26 are pending. Claims 11, 12, 15, 16, 18, 25 and 26 are withdrawn.

I. Claim Amendments

The amendments to Claim 1 are based on the original description, page 5, lines 6-8, page 7, lines 12-15, page 8, lines 5-9. In view of these amendments, dependent Claims 2-5 are canceled.

II. Species Election

Applicant affirms the telephonic election of Species 1, Claims 1-10, 13, 14, 17-24. Applicant requests that, after claims to the currently elected species is found allowable, a reasonable number of additional species be examined. Should amended Claim 1 be allowed, rejoinder of the non-elected species is respectfully requested.

III. 35 USC 112

Claims 8-10 and 24 stand rejected under 35 USC 112, second paragraph.

Claim 8 has been amended to include the features of Claim 4, consistent with amendments to base Claim 1.

Claim 9 has been amended to depend from Claim 8. It is respectfully submitted this responds to the rejection of Claim 24.

Claim 10 has been amended in response to the antecedent basis rejection.

IV. 35 USC 102

Claims 1-4, 7, 8, 13, 17, 21-23 stand rejected under 35 USC 102(b) as being anticipated by US 3,064,645 to Ficat et al.

Ficat et al. lacks the amended claim 1 feature of conical coupling between the hollow head (12), which comprises an inner cavity (14), and the flange-type insert (15-115). (Reference numbers are provided in the present Remarks for the Examiner's convenience and not to limit the claimed invention). Thus, this rejection is overcome.

V. 35 USC 103

Claims 5, 6, 9, 14, 19 and 24 are rejected under 35 USC 103(a) as being unpatentable over Ficat et al. in view of Townley (US 6,096,084).

As stated above, Ficat et al. lacks the amended Claim 1 feature of conical coupling between

the hollow head (12), which comprises an inner cavity (14), and the flange-type insert (15-115). The conical coupling allows one to obtain a rigid and stable anchoring between the head (12) and the flange-type insert (15-115), by means of the interference between the conical perimeter of the inner cavity (14) of the head (12) and the conical outer perimeter of the flange-type insert (15-115).

The hip prosthesis disclosed in the present invention is of the "resurfacing" type, that is a prosthesis suitable to be fixed on top of a neck of a femur leaving it substantially intact (see description on page 1, lines 5-7 - see also Figures 1-3 when compared with Figure 13 of Ficat et al, from which is clear the different portion of the bone of the femur which is left intact in the resurfacing type prosthesis, as disclosed in the present invention).

In this type of "resurfacing" hip prosthesis, the protruding part of the bone of the femur, which remains substantially intact, cooperates with a protruding part of the pin inserted inside the femur in supporting the hemispherical head. The head (12) of the present invention, which is completely hollow inside, is coupled to the flange-type insert (15-115) in such a way that the flange-type insert (15-115) is almost completely inserted inside the inner cavity (14) of the head, and the head (12) itself, in its mounted position, substantially embraces almost completely the top portion of the bone (see Figures 1-3 of the present patent application).

The conical (mating) configuration of the inner perimeter of the inner cavity (14) of the head (12) and of the outer perimeter of the flange-type insert (15-115) (see page 7, lines 12-15; page 8, lines 5-9) allows to rigidly and definitively mount the head (12) on the flange-type insert (15-115) after having coupled the latter to the protruding part of the pin (18) deeply inserted in the femur (see page 10, lines 30-31, page 11, lines 1-2).

Ficat et al. does not teach nor suggest the above features of the amended claim 1.

Ficat et al. discloses a damped hip prosthesis, of the type involving a complete resection of the bone of the femur, wherein the hemispherical head, to obtain the damping effect, is filled with a core made by an elastomer (see description on col. 1, lines 45-47) or is provided with springs (col. 1, line 70) located inside the head itself.

Ficat et al., column 2, from line 15, explicitly states "The damped head is secured in the two above-mentioned cases through screwing over the spindle adapted to carry it, which allows providing interchangeable heads and also adapting the prosthesis to each particular case by resorting to a single

standard type of spindle...".

It is therefore clear that the damped head disclosed in the patent to Ficat et al. is configured to be mounted (screwed) directly on the spindle (pin) inserted in the femur, and no coupling or reciprocal blocking is provided with a flange-type insert located between the head and the spindle.

It is also clear that the lower element (the spherical cap 8) disclosed in the patent to Ficat et al., which the Office action asserts to be analogous to the coupling (flange) means cited in the present patent application, cannot be compared to the flange-type insert (15-115) thereof. In fact, the spherical cap (8) disclosed in Ficat et al. has no function of mounting and rigidly blocking (by means of a conical coupling) the hollow head of the prosthesis, but has only a function of abutment for the upper spherical cap (see description on col. 3, lines 22-24).

Moreover, "The upper articulated cap 11 and the lower cap 8 thus designed are assembled in the manner illustrated in Fig.4 with a clearance between the edge 15 of the cap 11 and the bead 10, after which they are subjected to an injection of a mass of the silicon rubber...". (Ficat et al., col. 3, lines 39-43).

From the foregoing, it is clear that the function of the lower cap (8), as disclosed in Ficat et al., is completely different with respect to the function of the flange-type insert of the present invention.

The former is used to obtain a coarse positioning of the upper cap without reciprocal contact, to leave a clearance through which an elastomeric material can be injected for completely filling the inner volume of the spherical upper cap.

The latter has the function to allow the rigid and definitive mounting of the hemispherical upper head, by an almost complete insertion of the hollow head over the flange-type insert and by a conical coupling between the inner perimeter of the spherical head and the outer perimeter of the flange-type insert itself.

The embodiment of Fig. 10 of Ficat et al. discloses a plate comprising a ring (22) and a flange (23); the ring (22) has a diameter almost equal to that of the upper cap (11) (col. 4, lines 54-56), whereas the flange (23) acts as a brake for positioning the upper cap (11). As above, the upper head is configured to be filled by injection of an elastomeric material in order to perform its dampening function.

Like the embodiment discussed above, there are no elements disclosed in Ficat et al. able to perform the function of the flange-type insert (15-115) of the present patent application.

In Ficat et al. the upper cap is always configured to be rested on the lower element and then to be filled by an elastomeric material. This makes it impossible to compare this configuration to that of the present invention, wherein the head is completely hollow inside and is deeply applied onto the flange-type insert to make its inner (conical) perimeter to cooperate with the outer (conical) perimeter of the flange-type insert (15, 115) to obtain a rigid and definitive mounting by reciprocal interference without requiring any auxiliary elements (such as screws or similar) and without contact between the head and the spindle or pin. Applicant emphasizes that in the present invention the prosthesis is of the "resurfacing" type and the head must embrace quite completely the protruding part of the femular bone, which remains intact. This is impossible in the embodiment of Ficat et al. because the inner volume of the head is filled with the elastomeric material and therefore it can be only rested on the top portion of the femural resection.

The patent of Townley can not remedy the deficiencies of the patent to Ficat et al, because of the remarkable differences between the function of the flange- type insert of the present patent application (rigid anchoring of the head by means of conical coupling) and that of the patent to Ficat et al (coarse resting of the head leaving a clearance between them for the injection of the elastomeric material).

Even if Townley discloses a conical coupling between a protruding part of the pin and a (not hollow) hemispherical upper cap, there is neither a hint nor suggestion to combine this teaching with that of Ficat et al., to obtain the present invention in an obvious way.

In fact, as broadly explained before, the disclosure of Ficat et al teaches away from the teaching of the present invention because it does not employ the flange to mount by a conical coupling the head upon it. Therefore the teachings of Ficat et al. cannot be modified according to Townley to arrive at the present invention.

Claim 10 is rejected under 35 USC 103(a) as being unpatentable over Ficat et al. in view of Leonard (FR 2773469). Claim 20 is rejected under 35 USC 103(a) as being unpatentable over Ficat et al. in view of Pappas (US 5,030,234). It is respectfully submitted these secondary references do not make up for the deficiencies of Ficat et al.

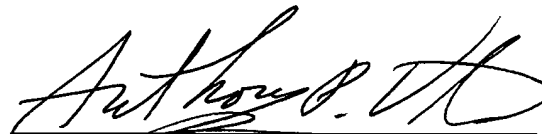
VI. Conclusion

In view of the above it is respectfully submitted all objections and rejections are overcome.
Thus, a Notice of Allowance is respectfully requested.

Respectfully submitted,

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